



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

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May 26, 2017

Andrew Park, Project Manager
Corrective Action Section
Hazardous Waste Programs Branch
U.S. Environmental Protection Agency Region 2
290 Broadway, 22nd Fl.
New York City, NY 10007-1866

RE: Amerada Hess Corp
750 Cliff Rd
Woodbridge, Middlesex
EPA ID No. NJD045445483
PI #: 006148

Dear Mr. Park:

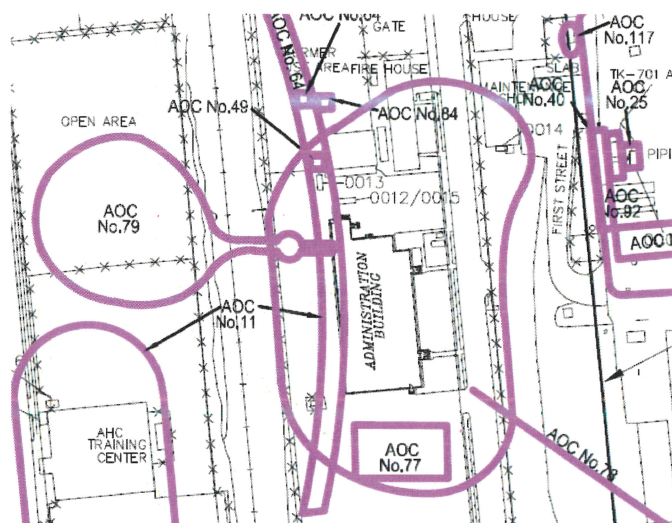
The New Jersey Department of Environmental Protection (Department) has completed a review of the Remedial Investigation Work Plan – AOC 11A Administration Building dated April 6, 2016, and as amended in the March 24, 2017 response to comments, submitted pursuant to the Resource Conservation and Recovery Act (RCRA), and the NJDEP Technical Requirements for Site Remediation at N.J.A.C. 7:26E (Tech Rules).

The Department agrees with the conditional approval of the remedial investigation workplan by USEPA. The below comments identify concerns that the Department requires the Remedial Investigation Report (RIR) submission to address. The Remedial Investigation Report shall address and respond to these below comments:

Overview:

The Administration Building was identified as an AOC in the facility's Comprehensive Management Plan based on chlorinated VOC contamination identified during the removal of three USTs north of the Administration Building (October 10, 1991 Discharge Investigation and Corrective Action Report). Hess reportedly used UST 0012 for disposal of RCRA Hazardous laboratory samples and solvents. The 2015 PA/SI identified several areas of concern: AOC 77 (AST farm), AOC 78 (ditch), AOC 79 (discharge) connected to or within AOC 11A that are not specifically included in the Remedial Investigation Workplan (RIW). The SIR included

additional information on the former property owner (Petroleum Solvents Corporation) and a soil sample from the AST Farm (AOC 77). There was no SI sampling conducted at AOC 78 or 79. The AOCs are shown in the portion of Figure 5 (November 2015 SIR), below:



Ground water investigations to date have identified high chlorinated VOC and aromatic VOC concentrations in monitor wells and temporary wells around the Administration Building. Ground water impacts include 1,4-Dioxane (now a SVOC analyte). Well installations include shallow (less than 20' deep) and intermediate wells (between 23 and 30' deep) that must be contoured separately in the RIR submission. Historic investigations included 13 temporary wells, generally 10' screen set across the water table.

Monitor well and temporary well sampling broadly indicate the presence and migration of COC in several areas around the Administration Building, and vertical migration to a more transmissive aquifer unit below the water table zone.

Monitor wells installed in 1991 based on the UST investigation were followed by other plume delineation actions between 2002 and 2013. The 2014 4th Quarter Progress Report (January 2015) included comprehensive groundwater data summary tables through 2014 (monitor wells and temporary wells) for each AOC. A site-wide monitor well and surface water staff gauge survey/re-survey was conducted and December 2014 forms were provided in a later Progress Report (2014 4th Quarter Progress Report, January 2015).

Monitor well AD-2 north of the Administration Building has only identified chlorinated VOC impacts. AD-5D shows CVOC impacts in a slightly deeper portion of the aquifer. Two water table zone temporary well sample locations had elevated CVOC and aromatic VOC concentrations:

- AD-TW-7 (2009): 0-10.5' bgs, ground water at 3.4' bgs: benzene (0.018 mg/L), chlorobenzene (0.253 mg/L), chloroethane (0.010 mg/L), 1,1-DCE (0.031 mg/L), cis-1,2-DCE (3.97 mg/L), PCE (0.140 mg/L), TCE (4.2 mg/L), vinyl chloride (1.75 mg/L).

- AD-TW-9 (2009): 0-10.5' bgs, ground water at 3.9' bgs, OVM 190 ppm: chlorobenzene (0.054 mg/L), 1,2-DCB (3.86 mg/L), 1,4-DCB (1.49 mg/L), ethylbenzene (2.25 mg/L), PCE (0.036 mg/L), 1,2,4-TCB (2.17 mg/L), total xylenes (14.2 mg/L).

The AOC 77 SIR soil sample location identified elevated chlorinated and aromatic VOCs at 10.5-11' bgs at the south side of the Administration Building: chlorobenzene (4 mg/kg), 1,2-dichlorobenzene (190 mg/kg), 1,4-dichlorobenzene (71.5 mg/kg), cis-1,2-dichloroethene (23.1 mg/kg), ethylbenzene (60 mg/kg), PCE (1,590 mg/kg), 1,2,4-trichlorobenzene (250 mg/kg), TCE (10.2 mg/kg), total xylenes (279 mg/kg).

Contaminated ground water collected in basement sumps at the north end of the building (near UST 0012 and 0015 and CVOC ground water contamination) discharged somewhere above ground. Piping was modified to connect the sumps to MCUA, but whether that connection is now used is not clear. Approval to discharge was still pending through the 2015 2nd Quarter Progress Report (Section 4.7, page 8, July 31, 2015).

A review of 1947, 1954, and 1957 aerial photos show areas around the Administration Building that appear to be unpaved until sometime between 1957 and 1963. There appear to be more disturbed areas in the 1957 photo. Hess took ownership of the property in November 1957. The 1963 and later photographs show the AST tank farm was removed, and the property around the building was clearly paved.

There are underground utilities within AOC 11A and around it that need to be evaluated as potential preferential flow paths in the RIR Submission.

Vapor intrusion has been evaluated and was re-evaluated January 2016. Ground water quality data supports continued evaluation of the vapor intrusion receptor pathway.

NJDEP COMMENTS:

The Department requires that that the following information be compiled prior to field mobilization to confirm and optimize the proposed MIP and monitor well locations included in the RIW and to identify any other data gaps for inclusion in the investigation.

The investigation should include efforts to delineate source area(s) for targeted remedial action design and plume migration and delineation for receptor evaluations. The field effort shall include AOC 77, connection to AOC 78 and the AOC 79 area.

The following information must be provided in the RIR. Hess shall correct and/or verify the following information and adjust the investigation locations prior to mobilization:

1. Ground Water Monitor Well Location and Construction:

- Confirm well locations relative to historic site figures. Earth Systems well location figures differ from EnviroTrac figures, which may be a figure scale issue. The RIR must confirm that well locations reflect the December 2014 well location survey information.
- Generate a Monitor Well Construction Summary Table for the AOC 11 area based on well construction records, well diagrams, etc. In the table, include well ID, December 2014 survey measuring point (top of inner casing), well screen interval (bgs and below top of inner casing), and include the most recent measured total depth from the measuring point to evaluate redevelopment. This table is critical to verify that low flow purge and sample collection is from the screen interval of the well and must be present in the RIR.

2. Ground Water Elevations and Flow:

- Generate separate ground water contour maps for the water table zone (AD-1, 2, 3, 4, 5, 6, 8), and intermediate zone (AD-3D, 5D, 9D) using ground water elevation data based on the December 2014 TOC elevation data. The depth to water measurements and the date of the gauging event must be provided.
- Calculate vertical gradients (upward, downward) at AD-3/3D, AD-2/2DD and AD-5/9D.

3. Basement Construction:

- Identify if the east and west basements are the whole basement, or are separate rooms in a larger basement.
- Identify the date sumps began discharging to the MCUA, if applicable, or clarify if the sumps are still discharging outside of the building, and where.
- Determine if the sumps are covered to mitigate vapor intrusion.

4. Administration Building Site Plan Summary: The RIR Figures must show:

- The former UST locations (UST 0012, 0013, 0014, 0015),
- Horizontal UST excavation limits (1991 DICAR, Figure 2),
- Basement limits, basement rooms where the sumps are, and the sump locations (March 2015 temporary discharge approval application, 2015 1st Quarter Progress Report includes the sumps),
- Original sump discharge points outside of building (even if now connected to MCUA),
- AOC 77 limits and vertical and horizontal tank footprints,
- Terminus of AOC 78 (ditch) east of Cliff Road (based on aerial photos),
- AOC 79 location/connection to building,
- Locations of known subsurface utilities from all sources (1991 DICAR, progress reports, etc.),
- Locations of all AOC 11A monitor wells, temporary wells, soil borings, etc.,
- Limits of unpaved areas prior to Hess ownership and current unpaved limits,
- Locations of any aerial photo areas that support investigation (discolored, disturbed, etc.).

5. Cross Sections AOC 11A:

- Include cross sections that focus on the AOC 11A area to support the sample locations.
- Include a cross section from Milo's way through AOC 77, the Admin Building and UST excavation area to show lithology, the first floor/basement floor, subsurface piping, relative to the water table and changes in subsurface materials. The UST 0012 excavation was reported to be 8' deep, and 0015 was 15' deep.
- Perpendicular cross sections as needed to represent the investigation information and understand contaminant source and migration paths.

6. Subsurface Utilities:

- Use geophysical surveys and facility records to show:
 - Locations and depths of piping in and around the AOC 11A area, and connections between AOC 77, 78 and 79.
 - Confirm locations and depths of known subsurface utilities (storm water, waste water, potable water, sanitary sewer, gas, electric, steam, etc.).
 - Historic drawings showed a storm sewer between the drainage ditch and the Administration Building (1991 DICAR, Figure 2), as well as gas line, water line, electric line and steam line locations. This may be a schematic figure.

7. Analytical Parameters: Ensure that RIW analytical parameters in all media are appropriate for the Petroleum Solvents Corporation products, and will include 1,4-Dioxane which is now part of the SVOC analysis.

8. Figure 4 Contour Map: Correct contour figures using December 2014 TOC well survey data.

Well ID	December 2014 Elevation Inner Casing	Well Record Completion Interval (BGS)	Well Record Well Finish
AD-1 (S)	16.12	3 – 18'	Flush Mount
AD-2 (S)	16.64	3 – 18'	Flush Mount
AD-2DD (D)	16.58	40 – 45'	Flush Mount
AD-3 (S)	19.96	1 – 11'	2.85' stickup
AD-3D (I)	19.71	24 – 29'	2.72' stickup
AD-4 (S)	15.45	2 – 15'	Flush Mount
AD-5 (S)	15.59	2 – 15'	Flush Mount
AD-5D (I)	15.48	25 – 30'	Flush Mount
AD-6 (S)	17.13	2 – 15'	Flush Mount
AD-8 (S)	15.85	1 – 15'	Flush Mount
AD-9D (I)	15.5	23 – 28'	Flush Mount

9. Membrane Interface Probe (MIP) Soil Investigation: MIP technology is discussed in the NJDEP Ground Water Technical Guidance. MIP locations are shown on Figure 6 of the RIW.
- The proposed locations must be reevaluated with the summary figure that shows MW and TW locations and the other AOC 11A information (Item 4, above). The Department notes that the proposed locations will not advance the remedial design for the AD-2 and the AOC 77 areas, or plume delineation (AD-5D, AD-TW-7, AD-TW-9).
 - The site plan summary, cross-sections, etc. described above will be evaluated in the RIR to determine what the selected MIP locations bring to RI and RA decision making.
10. The scope of what area(s) comprise Area of Concern 11A is confusing. Based on Hess's description, there seem to be multiple known and potential contaminant sources at or near the Administration Building. The RIWP is entitled AOC-11A: Administration Building. This differs from Page 1 text where Hess states that issues regarding underground storage tanks (USTs), soil and groundwater conditions near the Administration Building have been designated as AOC-11. The Department notes that free product and soil saturated with product was present when the USTs were removed. Hess also says that a plume of chlorinated solvents has been attributed to a Quality Control laboratory within the Administration Building. Then, on Page 3 of the RIWP, Hess mentions a former aboveground storage tank farm (ASTs) immediately south of the Administration Building, and a former culvert southeast of the Administration Building.

The Department is unable to discern whether all of the potential sources and preferential pathways are being addressed in the current RIWP versus other documents, and if so, which documents. The Department is concerned with the approach of splitting up the area into multiple segments without a clear justification to do so.

The RIR must confirm that the fragmented approach will not be administratively and technically confusing, or increases the potential for contaminant sources and delineation being overlooked.

11. The proposed membrane interface probe soils investigation does not seem to address all potential source areas, does not seem to be biased towards source areas, and does not seem to delineate potential source areas. Hess does not provide justification for the locations proposed. Sample depths are not discussed. Discharge areas such as but not limited to the former USTs and ASTs are not even depicted. If there are prior soil analytical results, they have not been presented in the workplan. Preferential flow paths such as the culvert are not discussed. Locations with elevated ground water concentrations such as AD-2, AD-5 and AD-5D do not seem to be in close proximity to the proposed MIP boring locations.

Hess's RIR must address these concerns in order to be acceptable under the Department's Technical Requirements for Site Remediation, N.J.A.C. 7:26E-4.1, Remedial Investigation Requirements.

If you have any questions regarding this correspondence, please reach me by phone at (609) 292-0395, or email at Phil.Cole@dep.nj.gov.

Sincerely,



Philip Cole, Case Manager
Bureau of Case Management

cc: John Schenkewitz, Hess Corporation
John Virgie, LSRP, Earth Systems